

A photograph of the Golden Gate Bridge in San Francisco at night. The bridge is illuminated with warm orange lights, and its reflection is visible in the dark water of the bay. The sky is a deep blue with some clouds. In the foreground, a building is partially visible on the left, and the city lights of San Francisco are visible in the distance on the right.

San Francisco TB Control

Progress and Performance

2007

TB Control Goals

- * Find and treat all cases to completion
- * Stop transmission
- * Prevent TB in those at greatest risk of disease

Purpose of Annual Program Review

- * To share the progress made on specific goals and objectives
- * To tailor prevention and control efforts
- * To identify areas of program strength and opportunities for improvement

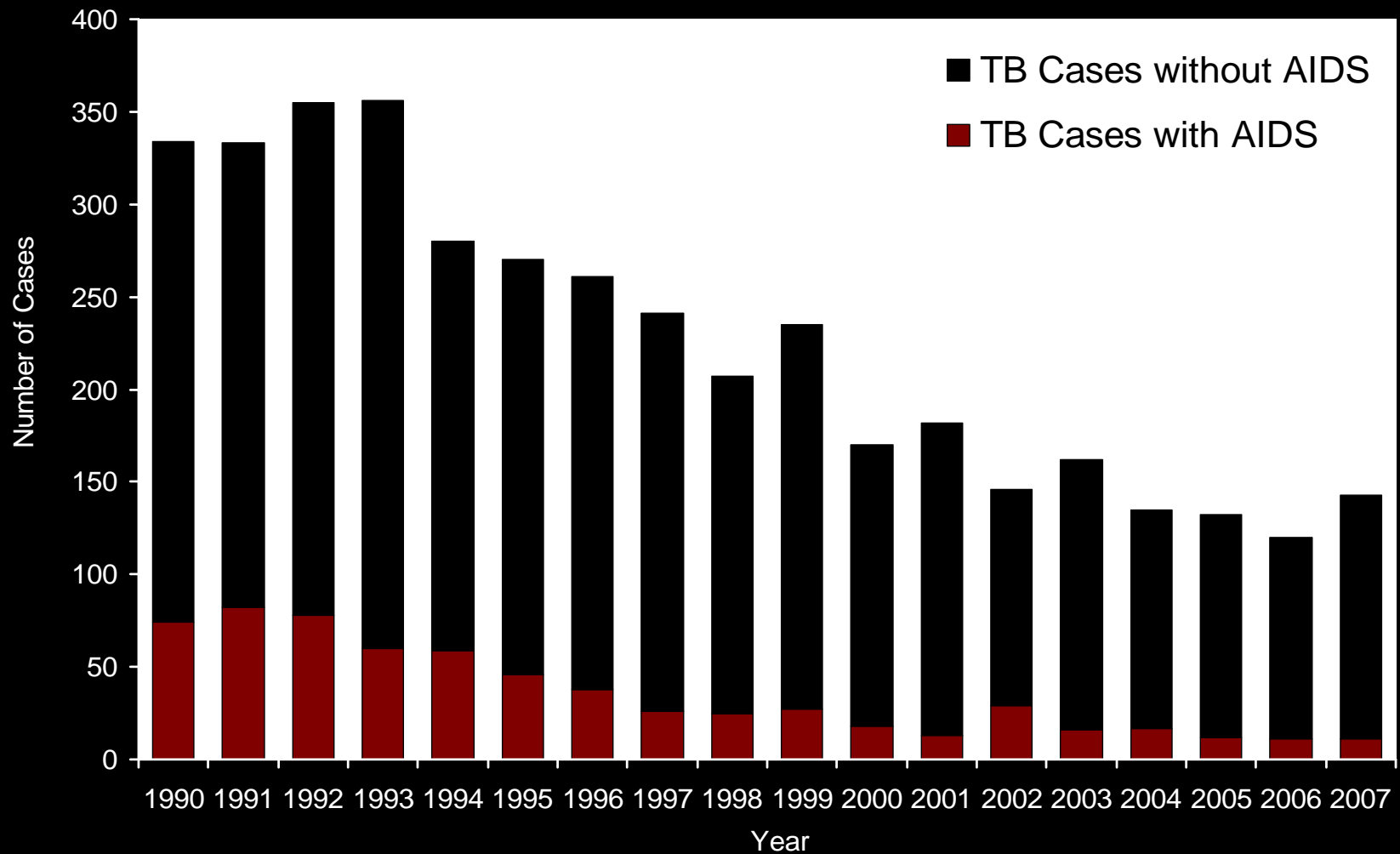
San Francisco Statistics

- * Population: ~ 808,802 (2007)
- * 37% foreign born
- * 6,000 – 8,000 homeless
(16% HIV+, 32% LTBI)
- * 18,000+ injection drug users
(22% HIV+)
- * ~55,000 jail bookings each year

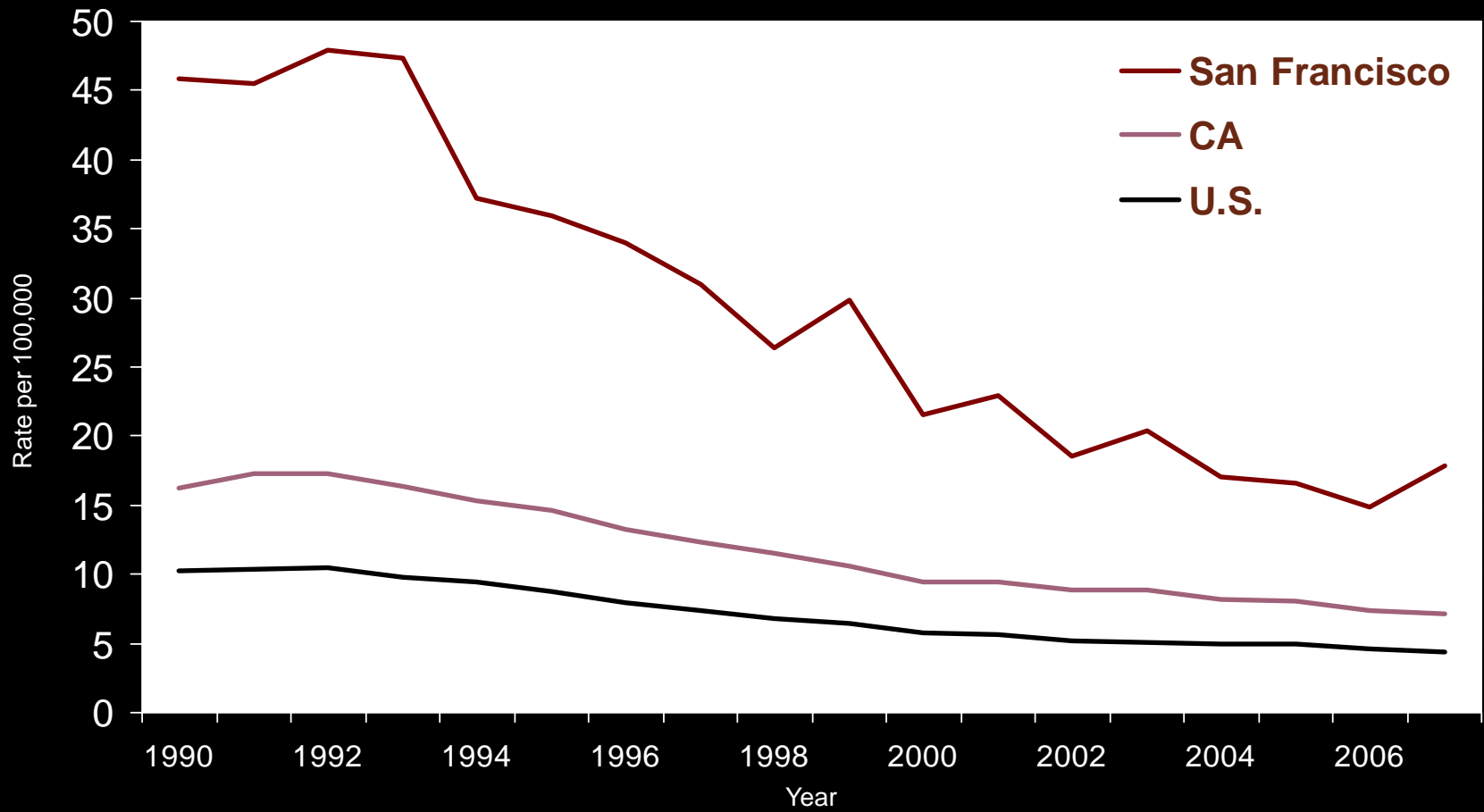
TB Case Rates – 2007 (1)

- * 143 new cases reported –
19.2% increase from 2006
- * Incidence rate = 17.8 per 100,000
- * Highest rate of TB in California
2.5x California rate of 7.2 per 100,000
4x U.S. rate of 4.4 per 100,000
- * Cases remain concentrated in Chinatown
and the TL/SOMA but increasing in Mission
district

TB Case Counts 1990 – 2007



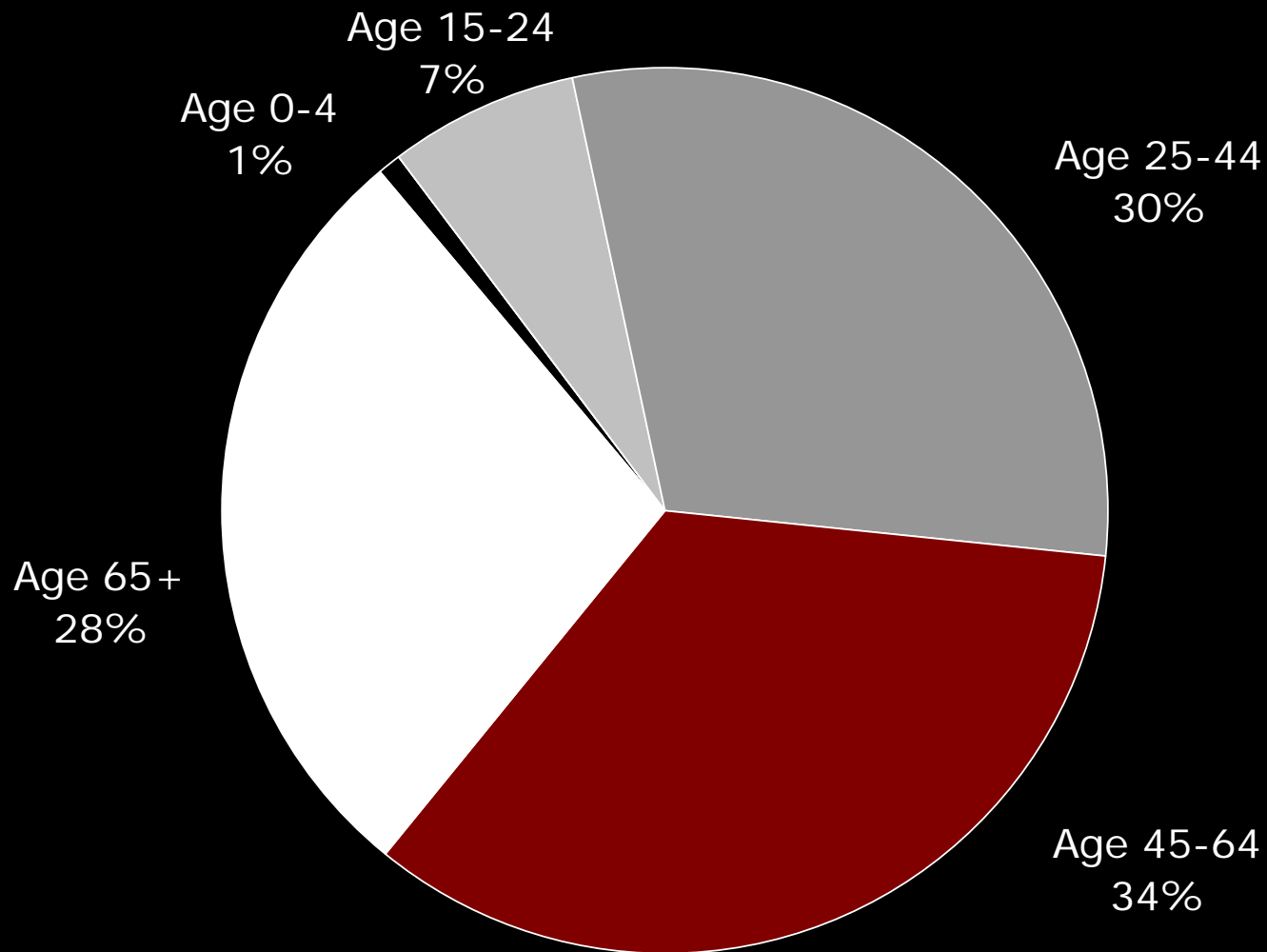
TB Case Rates 1990 – 2007



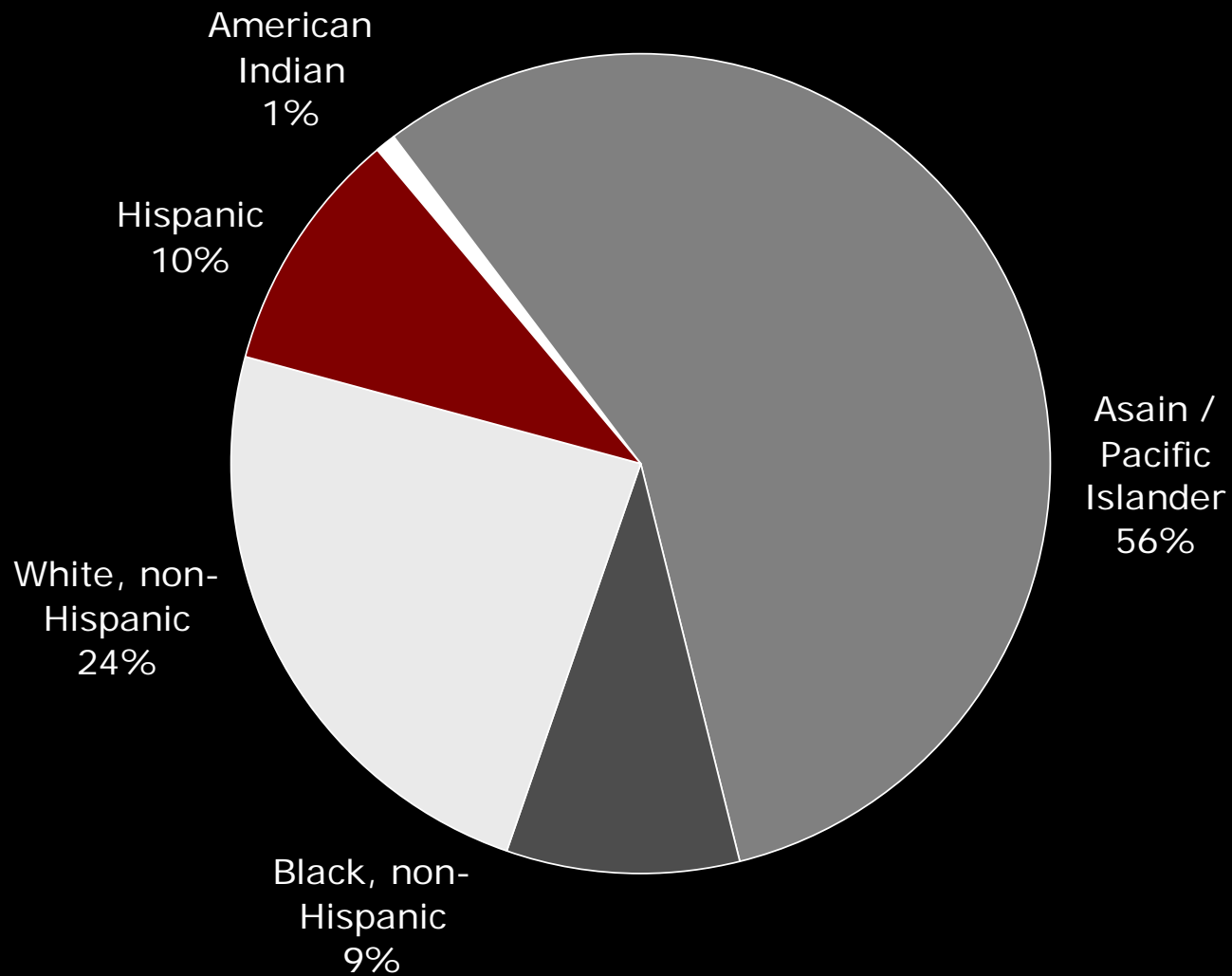
TB Cases 2007: Demographics

- * Increase in cases age 20-64
- * 72% of cases are male
- * 75.5% foreign-born
- * Continued increase in cases from Mexico (2 in 2004, 15 in 2007)
- * African American cases remain stable – rate more than 6xs (24.3) rate in whites (3.9)
- * 1 in 3 cases over the age of 65 died – 11 of 13 were Asian!

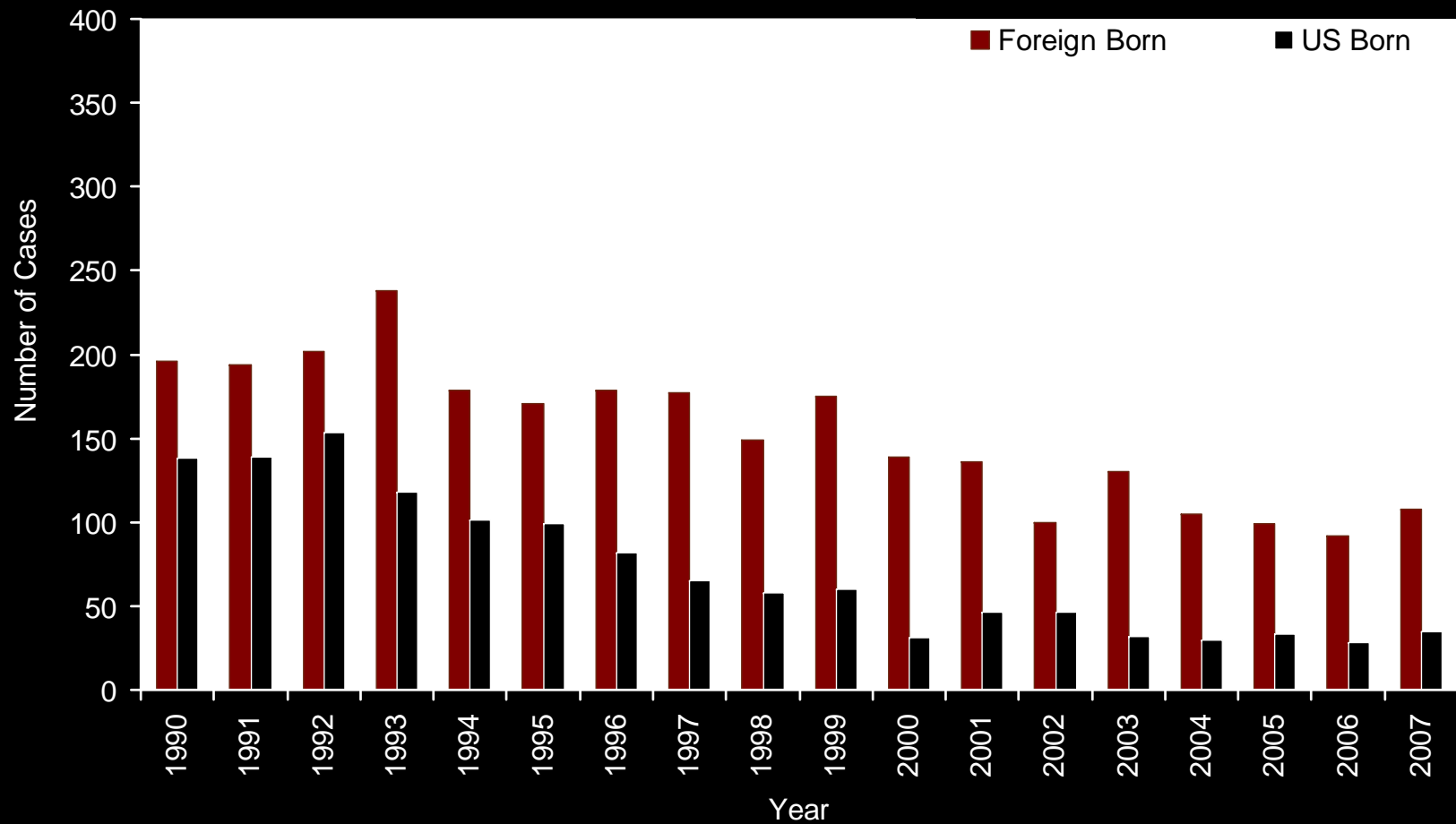
TB Cases 2007: Age Group



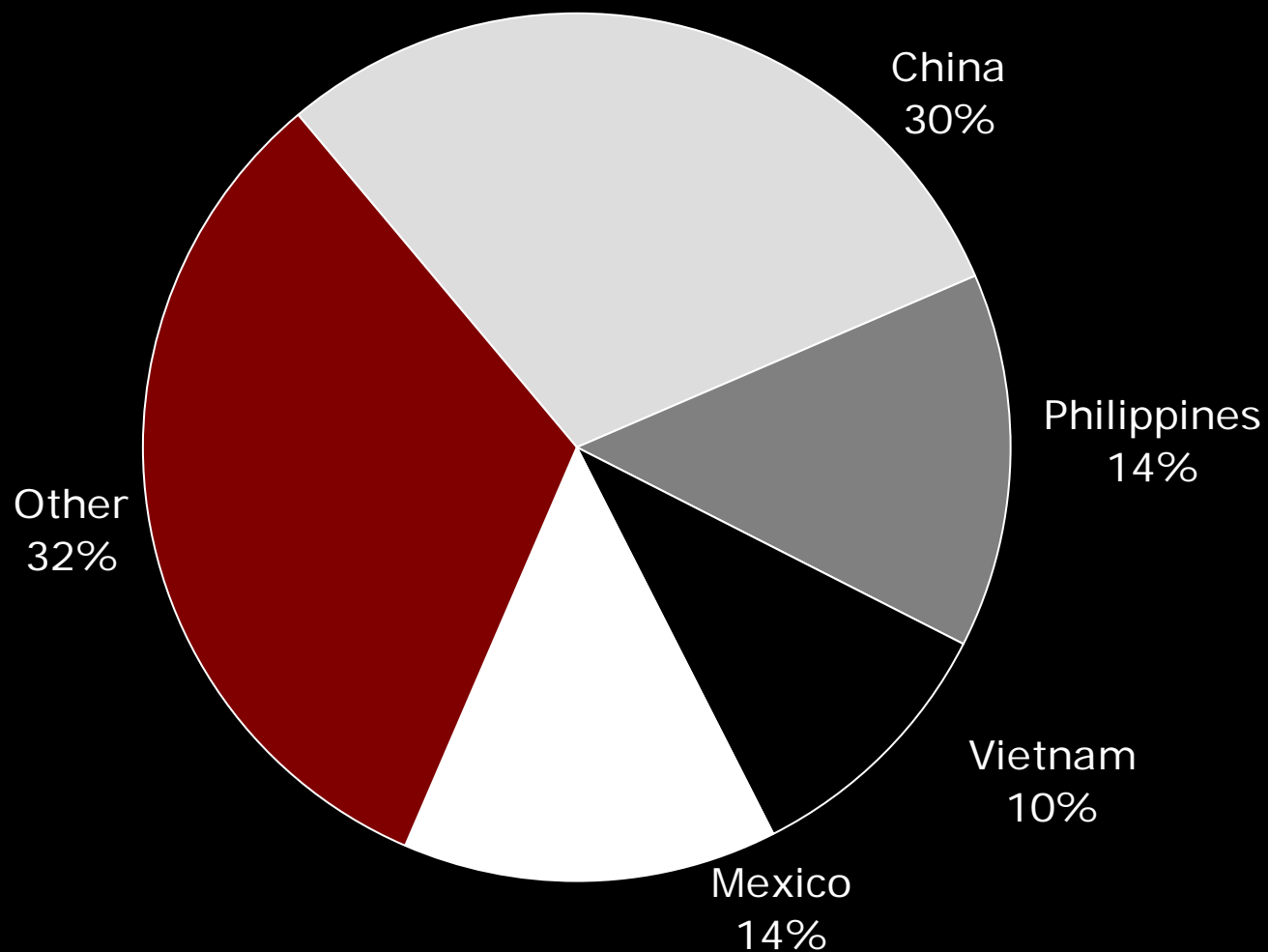
TB Cases 2007: Race/Ethnicity



TB Cases 1990 – 2007: Nationality



Foreign-born TB Cases 2007: Place of Birth



TB Cases 2007: Social Factors

HIV:

- * ~7.7% of all cases (11)
(2005: 10%, 2006: 9%)

Social Factors:

- * Homelessness: 18% (25 cases)
- * Drug abuse: 10% (NIDU), 4% (IDU)
- * Alcohol abuse: 9%

TB Cases 2007: Drug Resistance

- * INH alone: 4.6% of Cx+ cases resistant to INH
- * Increase over last 5 years in resistance to INH + other drugs (3.7%)
- * MDR: 2 cases in 2007 (<2%)
- * Acquired: None!

Treatment and Case
Management of Person
with Active TB

National Performance Measure 1

Timely Treatment Completion:

Increase the percentage of TB patients who complete a course of curative TB treatment with 12 months of initiation of treatment.

Treatment Completion within 12 Months: RIF-Susceptible Cases

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
88%	87%	83%	86%	44%	≥ 90%	≥ 90%	≥ 90%	≥ 90%	≥ 90%	85%	90%

2006 Progress: Not Met

- 7 cases had legitimate reasons for extending treatment beyond 12 months
- 2-2006 cases are pending treatment completion for acquired RIF-resistance (1) and extensive disease (1)

Overall Treatment Completion

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
98%	100%	99%	96%	48%	≥ 98%	≥ 98%	≥ 98%	≥ 98%	≥ 98%	98%	N/A

2006 Progress: Will Be Met

- Treated 114 cases (6 cases were reported at death)
 - 11 cases died
 - 3 cases moved
 - 2 case lost to follow-up
- Expected completion – 98%

Initiation of a 4-Drug Regimen

>15 Years of Age

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
75%	100%	100%	75%	100%	≥ 75%	≥ 75%	≥ 75%	≥ 75%	≥ 75%	70%	N/A

≥15 Years of Age

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
91%	95%	94%	93%	93%	≥ 93%	≥ 93%	≥ 93%	≥ 93%	≥ 93%	98%	N/a

2007 Progress: Met

- 10 patients not started on 4 drugs
- 99% started on an adequate regimen
- 2 PMD cases started on 2-3 drug regimens

Timely Treatment Initiation

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
98%	100%	89%	87%	97%	≥ 95%	≥ 95%	≥ 95%	≥ 95%	≥ 95%	95%	N/A

2007 Progress: Met

- 37 of 38 AFB sputum smear+ cases initiated treatment within 7 days of sputum collection
- 1 case started treatment 8 days after sputum collection

Sputum Culture Conversion within 3 Months

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
79%	81%	80%	75%	77%	≥ 90%	≥ 90%	≥ 90%	≥ 90%	≥ 90%	70%	N/A

2006 Progress: Not Met

- No documentation for 12 cases
- 6 did not convert in 3 months
- Documentation of conversion among PMD cases ~58%
- Need to ensure monthly sputum is collected for all cases

DOT

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
78%	50%	94%	94%	90%	83%	85%	87%	90%	90%	75%	N/A

2007 Progress: Met

- 105 of 117 eligible cases placed on DOT
- Dramatic improvement in use of DOT in 2005 (expanded definition to include cases placed on DOT while hospitalized)

National Performance Measure 2

Drug Susceptibility Testing:

Increase the percentage of TB patients with initial positive cultures who are tested for and receive drug susceptibility results.

Drug Susceptibility Testing

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	N/A	N/A

2007 Progress: Met

- All 108 culture-positive cases had at least one isolate submitted for susceptibility testing

Sputum Culture Collection – Cases >12 Years of Age

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
96%	99%	96%	100%	99%	≥97%	≥97%	≥97%	≥97%	≥97%	97%	N/A

2007 Progress: Met

- 1 pulmonary case had a lung culture but no sputum collected

National Performance Measure 3

U.S.-born African American Case
Rate:

For jurisdictions with greater than 50 reported cases of TB occurring annually in U.S.-born African Americans, decrease the case rate.

U.S.-born African American Case Rate

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
11	6	12	14	13	≤50	≤50	≤50	≤50	≤50	N/A	≤50
16.5	12.7	23.9	26.0	24.3	3.7	3.4	3.9				

2007 Progress: Met

- 13 cases reported in this ethnic group -
2 cases HIV+
- 8 were homeless
- Rate 24.3/100,000 – similar to Asian and Hispanic populations

National Performance Measure 4

HIV Testing:

Increase the proportion of adults with TB who have been tested for HIV.

HIV Testing Offered

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
85%	81%	79%	82%	88%	84%	86%	88%	90%	90%	N/A	N/A

2007 Progress: Met

- 16 cases over the age of 15 were not offered a HIV test
- Largest group not offered testing were cases over the age of 75 (13)

Evaluation and Treatment
of Persons with Class A/B
TB Notifications

National Performance Measure 5

Class A/B Notification:

Increase the percentage of immigrants and refugees designated as Class A, B1, or B2 who are appropriately evaluated and treated.

Evaluation of Class A/B Notifications

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
98%	92%	98%	94%	93%	≥97%	≥97%	≥97%	≥97%	≥97%	N/A	N/A

2006 Progress: Not Met

- Received 249 Class B notifications – 23 (9%) referred from other jurisdictions
- Unable to locate 13 migrants – big increase from 2005 (3)
- Expected evaluation for 2007 – 98%

Time from Notification to Evaluation

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
10	12	15	15	10	≤14	≤14	≤14	≤14	≤14	N/A	N/A

2007 Progress: Met

- Average time from notification to evaluation was 10 days
- 89% evaluated within 14 days
- 95% evaluated within 30 days
- Median time – 7 days

LTBI Treatment Initiation

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
97%	91%	93%	98%	91%	≥95%	≥95%	≥95%	≥95%	≥95%	N/A	N/A

2007 Progress: Not Met

- 181 immigrants with LTBI –65% eligible to initiate treatment (most had prior adequate treatment)
- 107 of 117 eligible immigrants started treatment – 3 not offered, 7 refused

LTBI Treatment Completion

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
89%	90%	88%	87%	53%	≥80%	≥80%	≥80%	≥80%	≥80%	N/A	N/A

2006 Progress: Met

- Only 13 of 106 immigrants did not complete treatment in 2006

Evaluation and Treatment
of High-Risk Infected
Persons

National Performance Measure 6

LTBI Treatment Completion among
High-Risk Infected Persons:

Increase the percentage of high risk persons who are placed on treatment for LTBI and complete a treatment regimen.

Evaluation of Community Referrals

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
99%	99%	80%	84%	87%	≥95%	≥95%	≥95%	≥95%	≥95%	N/A	N/A

2007 Progress: Not Met

- Received 2,901 referrals (7.5% decrease from 2006)
- Only 87% fully evaluated for TB – (overestimated in 2003, 2004)
 - 1% diagnosed with active TB (20 cases)
 - 93% had LTBI

LTBI Treatment Completion among High-Risk U.S.-born

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
64%	62%	45%	53%	34%	65%	68%	70%	73%	75%	N/A	N/A

2006 Progress: Not Met

- 705 persons with LTBI
 - 213 eligible for treatment (30%)
 - 137 initiated treatment (19%)
- 69 completed treatment – 53% of those that started but only 10% of all US-born with LTBI

LTBI Treatment Completion among High-Risk Foreign-born

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
74%	64%	69%	67%	47%	75%	77%	79%	80%	80%	N/A	N/A

2006 Progress: Not Met

- 1,692 persons with LTBI
 - 1,041 eligible for treatment (62%)
 - 809 initiated treatment (48%)
- 506 completed treatment – 67% of those that started but only 30% of all foreign-born with LTBI

TOPS Screening

- * 737 persons screened for TB by TOPS
 - 53% decline from 2006
- * Attended 4 Project Homeless Connects
 - 100 clients screened
- * Screenings at 6 community sites
 - 73 clients screened

CHOPS Screening and Referral

* 2007:

- 95 referred for evaluation
- 92 evaluated / 90 had LTBI

* 2006:

- 77% completed LTBI treatment
- Big decline in completion (92% in 2004)

Directly Observed Therapy

* Ward 94:

- 85 patients placed on DOPT
- 31 completed / 20 defaulted
- Estimated completion rate is 75%

* Ward 93:

- 6 patients placed on DOPT
- 4 completed / 1 defaulted
- Estimated completion rate is 83%

Evaluation and Treatment
of Contacts

National Performance Measure 7

LTBI Treatment of Contacts to Infectious Cases:

Increase the percentage of infected contacts to infectious cases that are placed on treatment for LTBI and complete a treatment regimen.

Contact Evaluation

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
92%	89%	64%	53%	46%*	≥95%	≥95%	≥95%	≥95%	≥95%	95%	95%

2007 Progress: Not Met

- 311 of 673 contacts fully evaluated for TB
 - 205 (29%) had no follow-up test
 - 35 (5%) had no x-ray or evaluation
- Case detection – 3% (8 cases found)
- LTBI – 24% (160 contacts)

**excludes B.P. and shelter investigations*

LTBI Treatment Initiation Among Contacts

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
60%	69%	76%	66%	72%*	70%	73%	75%	77%	80%	80%	N/A

2007 Progress: Not met

- 139 contacts eligible for LTBI treatment
- Only 4 of 10 contacts under age 15 started therapy
- 96 of 129 contacts over age 15 (74%) started treatment

**excludes B.P. and shelter investigations*

LTBI Treatment Completion Among Contacts*

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
83%	77%	69%	69%	60%**	80%	82%	82%	84%	85%	75%	85%

2006 Progress: Not Met

- Only 58 of 90 contacts over age 15 completed treatment
- All pediatric contacts completed treatment

**Contacts to sputum smear+ or sputum smear-/culture+ cases only*

***excludes B.P. and shelter investigations*

TB Case Interview*

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
N/A	N/A	59%	61%	61%	N/A	N/A	75%	85%	95%	N/A	N/A

2007 Progress: Not Met

- 61% (71 of 117) within 1 day (goal)
- 73% (85 of 117) within 2 days
- 92% (108 of 117) within 7 days

* Revised objective.

*TB Case Home Assessment – Smear+, Pulmonary Cases**

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
N/A	N/A	N/A	28%	34%	N/A	N/A	35%	55%	75%	N/A	N/A

2007 Progress: Not Met

- 34% (14 of 41) within 3 days (goal)
- 63% (26 of 41) within 7 days
- 88% (36 of 41) within 14 days

* Revised objective.

TB Case Home Assessment – Smear-, Pulmonary Cases*

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
N/A	N/A	N/A	55%	68%	N/A	N/A	60%	70%	75%	N/A	N/A

2007 Progress: Met

- 72% (55 of 76) within 7 days (goal)
- 92% (70 of 76) within 14 days

* Revised objective.

Contact Identification – Smear+ Cases

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
98%	97%	97%	93%	95%	≥95%	≥95%	≥95%	≥95%	≥95%	90%	90%

2007 Progress: Met

- Contacts identified for 39 of 41 smear+ cases
- 71% identified 3 or more contacts
- Average: 31 contacts per case (due to large homeless investigations)
- Median was only 7 contacts per case

*TB Surveillance and Case
Reporting*

Timely Case Reporting

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
91%	90%	77%	81%	80%	87%	90%	90%	90%	90%	N/A	N/A

2007 Progress: Not met

- 80% of TB cases were reported within 1 day of initiating treatment
 - 86% of cases managed by HD
 - 56% of case managed by PMD
- Due to Weekends? Holidays? – probably not – better performance in past years

RVCT Reporting

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	95%	95%

2007 Progress: Met

- 100% reporting of key variables for all cases reported in 2006
- This goal is met every year!

Documentation of HIV Status

Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
81%	76%	89%	91%	91%	≥80%	≥80%	≥80%	≥80%	≥80%	N/A	75%

2007 Progress: Met

- All cases between the ages of 25-44 were offered a HIV test or had documentation of HIV status
- 39 of 43 cases were tested for HIV
- 4 refused testing

Drug Susceptibility Testing and Reporting

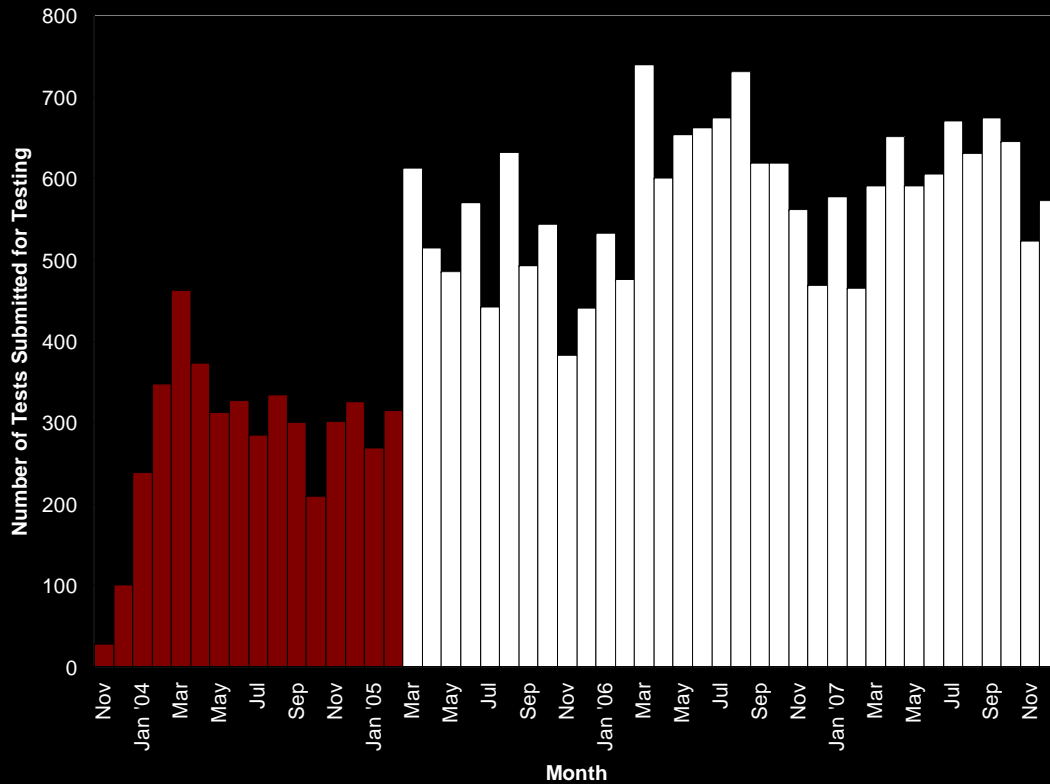
Progress					Goal						
2003	2004	2005	2006	2007	2005	2006	2007	2008	2009	CA	Nat'l
99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	N/A	90%

2007 Progress: Met

- All 108 culture-positive cases were tested for drug susceptibility to the first-line drugs

Quanti-FERON Testing

QFT Usage by Month



2004

3,183

2005

5,698

2006

7,337

2007

7,196

November 2003 –
December 2007

24,173 specimens
submitted for testing

QFT-Gold:

Total: 19,647

Positive: 2,180 (11%)

Negative: 16,082 (82%)

Indeterminate: 893 (5%)

Not Tested: 469 (2%)

QFT-Gold Testing Results by Site

Site	Total	Pos (%)	2007	Pos (%)
TB Clinic	3,376	888 (24)	1,927	392 (20)
TOPS	3,200	209 (7)	600	37 (6)
Chinatown	2,401	331 (14)	914	123 (13)
TWC	4,664	289 (6)	1,640	139 (8)
Refugee	5,20	80 (15)	185	29 (16)
Ward 93	1,189	44 (4)	198	9 (5)
Ward 86	4,73	14 (3)	263	9 (3)
Total	19,647	2,180 (11)	7,196	895 (12)

QFT Reversions

	Reverters	%	Non-Reverters	%
Total	19	(42.2)	26	(57.8)
Age (mean)	48		53	
Male	15	(78.9)	20	(76.9)
Hispanic	7	(36.8)	5	(19.2)
White	6	(31.6)	9	(34.6)
Black	4	(21.1)	5	(19.2)
Asian	1	(5.3)	7	(26.9)
Foreign-born	3	(15.8)	10	(38.5)
HIV+*	12	(63.2)	4	(15.4)
Any LTBI Rx**	5	(26.3)	4	(15.4)
LTBI Rx >6 months**	1	(5.3)	2	(7.7)

*Statistically significant at alpha=0.05.

**LTBI treatment between 1st and 2nd QFT test.

Program Evaluation

2007 Evaluation Projects

- * Assess missed opportunities for prevention of TB deaths
- * QFT experience
 - Performance in TB cases, B-notifications, contacts
 - QFT reversions and conversions
- * Continued review of unmet program objectives
 - LTBI treatment completion
 - Contact evaluation

I AM **Stopping TB**